



Rec'd PCT/PTO 09 MAR 2005
PCT/GB 2003 / 003877
10/527282
#2
INVESTOR IN PEOPLE

REC'D 23 OCT 2003

WIPO PCT

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Andrew Gersey

Dated 24 September 2003

BEST AVAILABLE COPY

PRIORITY
DOCUMENT

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

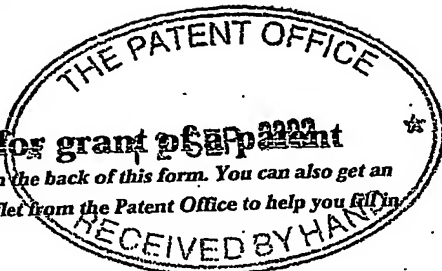
13SEP02 E747868-6 D00180
P01/7700.0.00-0221156.3

The Patent Office

Cardiff Road
Newport
South Wales
NP9 1RH

Request for grant of patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



1. Your reference

ISG/21016 GB

2. Patent application number

(The Patent Office will fill in this part)

0221156.3

112 SEP 2002

3. Full name, address and postcode of the or of each applicant (underline all surnames)

TOGGLE TOYS LIMITED

21 GROSVENOR STREET
MAYFAIR
LONDON W1X 9FE

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8464265001

4. Title of the invention

ASSEMBLY FOR GUIDING TOY VEHICLE

5. Name of your agent (if you have one)

A A THORNTON & CO

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

235 HIGH HOLBORN
LONDON WC1V 7LE

Patents ADP number (if you know it)

0000075001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

Yes

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

12

Claim(s)

2

Abstract

1

Drawing(s)

12 22 + 22

see mine attach

10. If you are also filing any of the following, state how many against each item.

Priority documents 0

Translations of priority documents 0

Statement of inventorship and right to grant of a patent (Patents Form 7/77) 0

Request for preliminary examination and search (Patents Form 9/77) 1

Request for substantive examination (Patents Form 10/77) 0

Any other documents (please specify) 0

11. I/We request the grant of a patent on the basis of this application.

Signature

Date

A. A. Thornton & Co.

12 SEP 02

12. Name and daytime telephone number of person to contact in the United Kingdom

IAN GILL - 020 7405 4044

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

Assembly for guiding toy vehicle

This invention relates to a toy with educational uses and particular, but not exclusively, to an assembly for guiding a toy vehicle.

One of the primary aims of the invention is to improve on the established format of track formation that is provided by most toy vehicle systems.

According to a first aspect of the invention there is provided an assembly for guiding a toy vehicle, the assembly comprising a plurality of substantially rectilinear track elements and a plurality of element connectors, each track element having three or more edges, and each edge having a shaped recess for receiving and retaining one end of one connector, such that, in use, the connectors releasably retain the abutting track elements with the ends of abutting edges in alignment.

Known track elements of this general type each have a jigsaw type combination of "male" and "female" connectors integrally formed with track element. This limits the number of orientations in which the elements can be connected to other elements, whereas the assembly according to the invention described above is not limited in this manner.

Preferably each track element is provided with two or more track-defining formations to allow the vehicle to be guided along two distinct pathways, and the track-defining formations being configured and positioned to facilitate alignment of the pathways between abutting track elements.

The invention differs from the established means of creating a toy of this type which uses sections of connecting track pieces each providing a single pathway for the vehicle. An assembly according to the invention utilises rectilinear track elements which are more robust and easier and quicker to assemble than conventional track elements. Further, the multiple pathways defined on each track element make it simpler to create or change a complicated track layout, allowing the user more "playing time".

Once the track elements are connected together each unique configuration of track elements immediately becomes a robust playing surface that can be moved and stored in its entirety or in sections. Also an assembly of this type is more robust than the conventional equivalent which is made up of a number of discrete track elements, each providing a single track pathway for a vehicle

Preferably both main faces of each track element are provided with two or more track-defining formations, the track-defining formation being configured differently on each face. The track elements according to this embodiment of the invention are reversible. Alternatively the other main face of the track element could have information printed on it conveying an appropriate educational or promotional message, such as a storyboard, or it can be provided with a surface that can be written on or drawn on by the user.

The track-defining formations preferably comprise a pair of equi-spaced grooves.

The individual track elements of the assembly may be formed from wood, but almost any rigid or semi-rigid board material, such as plywood, laminated chipboard or a plastics material, could be used. The use of a semi-rigid or flexible foam material, such as EVA foam, has a number of advantages: each track element is light and easily transportable; the track elements have no hard or sharp edges that might cause injury; the play surface that is created provides a quieter playing surface than those made of wood. It is also advantageous to manufacture the track elements from a material that can be re-cycled.

Although the track elements of the assembly may be square they may be, for example, rectangular, triangular or hexagonal. In a preferred embodiment connecting means are associated with each edge of each track element, and the connecting means are positioned and configured to allow any edge of a track element to be connected to any edge of another track element with a pair of parallel edges of the conjoint track elements in alignment.

In a preferred embodiment each connection means comprises pairs of shaped-recesses formed in the abutting edges of the track elements and a connector of complementary

shape. The recesses are preferably compatible for connection with known track pieces of other systems.

In a preferred embodiment, one or more secondary elements are provided, each secondary element having an upper surface and a lower surface, the lower surface having formations for complementary engagement with track-defining formations, such that, in use, the secondary formations overlies some or all of a pathway on a track element.

The upper surfaces of secondary elements may present educational information to the user, and preferably a number of secondary elements are provided with related informational content. For example, one set of secondary elements could relate to a clock face, allowing the user to construct a complete clock face from a number of component parts. Alternatively the upper surface of each secondary element could be provided with, say, a gear wheel, allowing a gear train to be constructed by the user by positioning the secondary elements in a suitable arrangement. Any number of alternative uses for the upper surface of the secondary elements can be found. The combination of the track elements and the secondary element enhances the educational value of the assembly without detracting from the enjoyment of the user.

According to another aspect of the present invention there is provided a connection piece for use in association with track elements of an assembly for guiding a toy vehicle, the track elements having shaped recesses for receiving the connection piece, and the connection piece comprising a main body with end sections shaped to complement the recesses in the track elements, and central section linking the end sections.

The aim of this aspect of the invention is to provide a simple and effective means of connection between track elements that is safe and easy to use.

A connection piece according to this aspect of the invention has numerous advantages over the most common connection system used in this type of product that comprises a recess in one track element with a complementary protrusion integrally formed with the mating track element, but in particular there are savings both in terms of materials

and costs that result from not having to cut down oversize track elements in order to cut away the waste required to form the integral protrusion.

The connection piece may be formed from a compressible material and configured to fit into the recesses on the track elements only in a compressed form to provide a secure fit between track elements.

In a preferred embodiment the main body has a basal flange. The flange increases the overall size of the connection piece to eliminate the chance that a small child could swallow the connection piece, and it improves the functionality of the connection piece by reducing and controlling vertical movement relative to the track elements. Upward vertical movement of the connection piece might obstruct the passage of the toy vehicle, and downward vertical movement of the connection piece, for instance on a soft surface such as a carpet, can allow the upper faces of the track elements to become vertically misaligned and thereby prevent smooth passage of the vehicles across the boundary between track elements. The flange underlies the track elements and thus supports the track elements above the surface supporting the assembly to protect the underside of each tile from abrasion or damage. The support of the track elements on the flange also serves to increase the stability of the assembly. Also, the need to place the track elements on to the connection piece rather than the connection piece in to the recesses reduces the chance that the fingers of the user may become caught or stuck as the assembly is put together.

The end sections of the connection piece may be solid, or they may be hollow. The hollow end sections can be used to accommodate other elements of the assembly, such as surface mounted accessories or support struts that might be used to support multi-layered constructions.

The end sections of the connection piece may be flexibly connected. The flexible connection of the end sections allows conjoined track elements to be folded over to overlie one another, back-to-back or face-to-face, whilst they remain connected. This arrangement facilitates storage and transportation of track element assemblies.

According to the broadest aspect of the present invention, there is provided an assembly for children's entertainment comprising a plurality of substantially rectilinear elements and a plurality of element connectors, each element having three or more edges, and each edge having a shaped recess for receiving and retaining one end of one of a connector, such that, in use, the connectors releasably retain abutting elements in aligned engagement. Rather than being used as a track for a toy vehicle, the elements of the assembly could be used, say, as construction elements in a building orientated toy.

A clear understanding of the various aspects of the present invention will be gained from the following detailed description, given by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a plan view of a track element according to the invention;

Figure 2 is a cross-section through the line AA of Figure 1;

Figures 3 and 4 show a number of conjoint track elements in different configurations;

Figure 5 is a perspective view of a connection piece with a basal flange;

Figure 6 is a plan view of the connection piece of Figure 5;

Figures 7a and 7b are views along the lines AA and BB of Figure 6 respectively, with Figure 7b showing an exploded view of the component parts of the connection piece;

Figure 8 shows an illustrative view of an alternative embodiment of the connection piece;

Figure 9 shows an illustrative views of a connection piece in use;

Figure 10 shows a side view, partially cut away of an assembly;

Figures 11a, b, c and d show illustrative cross-sectional views of parts of track elements;

Figures 12a and 12b shows a plan view of a bespoke track element suitable for incorporating further elements, such as bridges or the like; and

Figures 13 and 14 show alternative shapes for track elements and their interaction;

Figure 15 and Figure 16 show alternative track element configurations;

Figures 17a to 17h show illustrative views of alternative connector configurations; and

Figures 18a to 18g show various pathway configurations that can be adopted.

With reference to Figure 1 a square tile or panel, generally designated 1, has a generally uniplanar upper face 2 and four edges 3a to 3d. The upper face 2 has a multitude of tracks or channels 6 (see Figure 2), and equi-spaced pairs of tracks 6 define ten or more pathways 4a to 5e and 5a to 5e traversing the tile 1 from one edge to the parallel edge. Each pathway has an entry point E_1 and an exit point E_2 . Although the entry and exit points E_1 , E_2 are shown to be connected by straight tracks 6, it will be understood that the tile shown in Figure 1 simply illustrates the general configuration of pathways and entry/exit points, and the tracks could follow any path between the entry and exit points, subject to the constraint of the turning circle of the toy vehicle.

However it is preferred that a standard location of the entry and exit point E_1 , E_2 etc. relative to the tile edges is adopted to facilitate the alignment of track between adjacent tiles. By equi-distant spacing of the tracks can be used to define a further sub-set of pathways 7.

In theory any number of tracks can be formed on each individual tile, but in practice a practical limit is defined by the width of the tracks as, beyond a certain point, the tracks will merge with on another and lose coherence. Nevertheless, the assembly

provides a track density that is many times greater than known systems. As number of difference configurations of track are shown in Figure 18:

Figure 18a shows a general tile with the most commonly used pathways, although it will be appreciated that a single tile will not include all of the possible pathways depicted;

Figure 18b shows a tile with the tracks marked in bold defined on the tile surface, and defining a 'long' switch arrangement;

Figure 18c and 18d show 'short' and 'return' switch arrangements respectively;

Figures 18e and 18f show 'return' and 'universal' loop arrangements respectively;

Figure 18g shows a '5-splitter' arrangement.

The lower main face 3 of the tile can also be provided with tracks. The pathways on the lower face 3 have a different configuration to those on the upper face 2, and the tiles can be reversed. Figures 3 and 4 show some examples of assemblies of tiles with different pathways, and with the tiles arranged to define part of a circuit of the toy vehicle. The left hand tiles show the upper face 2 and the right hand tiles show the lower face 3 of each tile.

Each tile edge 3a to 3d has shaped recesses 8 in the region of the each corner. Each recess has a bulbous inner part 10 of generally circular cross section, and a narrower neck part 11 that communicates between the inner section 10 and the edge of the tile 3.

The recesses 8 are centrally located between the tracks 6 of the outermost pathways 4a, 4e, 5a and 5e and they are equidistant from the corners of the tile. This arrangement allows any edge of any tile to be connected to any edge of any other tile with the outermost edges of the tiles aligned. Other suitable arrangements of recess

location, such as a single centrally located recess would be equally efficacious. A connector or toggle for holding the tiles together is described in more detail below.

As can be seen from Figure 4, not all of the tiles in the assembly need to be square; the lower tiles shown in Figure 4 are rectangular with a pair of minor edges being half the length of two major edges. One of the minor edges is provided with additional recesses 8' to allow connection of the associated pathways on the tiles with the track pieces of other types of track systems. The tiles shown in Figures 13 and 14 are triangular and hexagonal. It is generally preferred that the tiles are shaped to allow tessellation.

Figures 12 a and b shows another tile configuration that could be used, say to incorporate bridges or other track features.

The pairs of tracks 6 which form each pathway could be replaced by a single channel 9 (see Figure 11c), a pair of raised protrusions, simulating railway tracks, or a single protrusion, simulating, say, a road way.

The spaces in between each track can be coloured and graphically enhanced to create scenery or other picture and further enhances the attraction of the assembly.

A connector or toggle, generally designated 20 (see Figures 5 and 6) has opposed end portions 21 connected by a central spar or bar 22. The end portions 21 and bar 22 have a cross-sectional shape which complements the shape of the inner part 10 of the recesses 8 and the neck part 11 respectively. The bar 22 is approximately twice the length of the neck part 11 or the recesses, so that the toggle 20 holds connected tiles in close abutment.

Although the cross-sections of the inner part 10 of the tiles and end portions 21 of the toggles 20 are shown to be circular, it will be understood that the shapes dove-tail together and any shape could be used, provided the shapes are complementary and the maximum width of the inner part of the recess is greater than the maximum width of the neck part 11. Similarly other shapes could be used for the neck part 11 and the bar 22.

Toggle 20 preferably has a flange-like panel 23 that provides a circumjacent lip at base of the toggle. The toggle could be a one-piece construction, but it is preferred that a three piece construction is used, with upper and lower panels 24 and 26 and a central body portion 25 (see Figures 7a and 7b). The three parts of the toggle are formed for releasable 'snap-fit' engagement, and the may be supplied to the user ready assembled or in a kit form.

A toggle could be provided two lower panels 26, both having flanges. One of the panels 26 can be attached to the toggle body 25 after the toggle is attached to the tiles so that, in use, the flanges sandwich the interjacent part of the tiles and hold the tiles in secure engagement. Alternatively, the toggle can be formed of resilient material and forced into a 'push-fit' engagement with the tile recesses. This form of toggle could be of particular use if the tiles are used as a construction-type toy where the tiles are used as building panels to form, say, a house. The 'double-flanged' toggle offers a secure connection between the tiles, even when the tiles are vertically orientated. The toggle with two flanges could also be used where a more secure connection is required between tile used in a toy vehicle assembly, and for instance where a semi-permanent assembly is created.

Figure 8 depicts an alternative toggle, generally designated 20'. The overall shape of the alternative toggle 20' is the same as the toggle 20, and it is made up from a three-piece construction. However, the toggle 20' has two distinct end pieces, each with a flange 23' connected to an upright cylindrical tube 21'. The tube 21' has a mouth or slot running along its length for receiving a flexible central membrane 22' of similar overall shape to the main body of toggle 20. The two ends of the membrane 22', which are themselves hollow cylinders, are each received and retained in the tubes 21' and the membrane serves to hold the end pieces 21', 23' in alignment. The end pieces 21', 23' can be identically configured to reduce manufacturing costs.

The flexibility of the membrane may be increased by providing a cut-out sections between the two ends of the membrane, such that the central section of the membrane comprises upper and lower beams or struts (see Figure 2).

The alternative toggle 20' provides an articulated joint between two tiles so that the tiles can be moved into a position with their main faces in confrontation without removal of the toggle 20'. As a result the alternative toggle 20' allows large assemblies to be stored compactly and transported easily.

Figure 17 depicts further alternative toggle configurations. Figure 17b shows a plan view of an alternative toggle generally designated 20". The toggle is a one-piece construction formed from a resilient flexible material, such as rubber. Figure 17d shows a side view of the toggle 20" (the other side view corresponds), and Figures 17a and 17c show central transverse and longitudinal sections. A single circumjacent flange 23" of uniform width surrounds the end portions 21" and central section 22". A cut away section 24 of the flange 23" defined between the two end portions improves the flexibility of the toggle 20", as does the narrowed waist portion 25 adjacent the cut away section 24.

The upper part of the central section 22", here designated as 26 is an inverted C-section. The arms 40 of the C-section increase the resistance of the toggle 20" to lateral and torsional movement. The outer surfaces of the arms 40 can also serve to form an engagement surface with ornamental inserts.

The toggle 20''' of Figures 17e to 17h has a similar configuration to the toggle 20", but a removable central section is provided and the end sections of the toggle 20''' are separately formed.

As shown more clearly in Figure 9, the toggles 20" and 20''' are configured in the region of the interface between the end sections and the upper part or strut 26 of the central section to assist in folding of the toggle. Particularly, the confronting walls of the end portions are narrower in width than the outer walls, and the width of the confronting walls narrows further in the region of the interface. The interface region is shaped such that, in a folded configuration shown in Figure 9, the upper side of the strut 26 lies in close abutment with the adjacent part of the inner walls of the end portions so that a more compact folded arrangement is achieved.

The hollow end sections 21 of the toggle can be used to mount accessories, such as signal post or the like on the board. The upper panel 24 of the toggle 20 can be removed and the end of the accessory inserted. Other accessories could include rods 27 for supporting one layer of tiles above another. The respective upper and lower panels 26, 24 of confronting toggles 20 can be removed and the rod 27 inserted. Abutments 28 hold the tiles 1 in the correct vertical alignment (Figure 10).

With reference to Figure 11, a number of inserts or inlays may be provided. The inlays 30a to 30f are configured with projections for engagement with the tracks 6 or channel 9, or they are sized to fit within the tracks or channels. The inlays may be coloured, pre-marked or blank for writing on. Inlays like 30f are narrower than the channel 6 and they may be used to create the impression of 'rails' for the user. In addition the inlay 30f may be coloured to distinguish between different pathways on the assembly of tiles.

A large variety of different pre-printed inlays can be envisaged to increase the educational benefit of the assembly. For instance with tiles suitably arranged to provide a circular pathway, pre-printed inlays of corresponding shape can be provided with the various elements of a clock face. The user can then assemble these elements under supervision.

The tracks 6 or channels 9 of the tiles may be formed by milling or otherwise cutting the grooves into the tiles. Cutting the grooves allows for greater flexibility of track layout and for the production of bespoke tiles if required. Alternatively, and where the material allows, the tiles may be preformed or moulded with grooves by processes such as injection moulding.

Figure 15 shows a novel tile configuration. A raised section 50 is stamped or integrally formed with the tile 1 to provide a downhill ramp for a vehicle. The raised section can be in the form of a spiral, and the pathway defined by the raised section is contiguous with a pathway on the planar section of the tile with surrounds the raised section.

The skilled person will understand that modifications to the exemplary embodiments of the invention described above can be made without departing from the scope of the following claims. For example, the lower main face 3 of each tile could be provided with a reusable surface, such as a 'dry-wipe' board, so that when the board is reversed it provides a large area for the user to draw or write on. Alternatively the lower main faces 3 of a number of tiles could be pre-printed with a storyboard or a game, such as snakes and ladders.

Also a track element could be divided transversely into a number of distinct parts, with each part being flexibly connected along an axis substantially at a right angle to the transverse division. This arrangement would allow the tile to be moved between a flat configuration and a configuration where the cross-section is generally S-shaped and thus link different horizontal layers of tiles:

ABSTRACT

A track layout for guiding toy vehicles is formed from a number of rectangular tiles 1. Each tile has at least two distinct pathways for the vehicle to increase the track density per tile in comparison with known systems of a similar type. The tiles can be orientated in any one of eight different positions. Each face 3 of each tile has one or more female parts 10 of a connector, and separate male part 21 of the connector holds the tiles together. The connector may be constructed from a number of different components, and has a circumjacent flange 23 that helps prevent vertical movement between the tiles.

1. An assembly for guiding a toy vehicle, the assembly comprising a plurality of substantially rectilinear track elements and a plurality of element connectors, each track element having three or more edges, and each edge having a shaped recess for receiving and retaining one end of a connector, such that, in use, the connectors releasably retain the track elements with the ends of abutting edges in alignment.
2. An assembly according to claim 1, wherein each track element is provided with two or more track-defining formations to allow the vehicle to be guided along two or more different pathways, and the track-defining formations being configured and positioned to facilitate alignment of the pathways between abutting track elements.
3. An assembly according to claim 2 wherein both main faces of each track element are provided with two or more track-defining formations, the track-defining formation being configured differently on each face.
4. An assembly according to claim 1, 2 or 3, wherein the track-defining formation comprises a pair of equi-spaced grooves.
5. An assembly according to claim 1, 2, 3 or 4, wherein the track elements are substantially square.
6. An assembly according to any one of claims 1 to 5, wherein the recesses are positioned and configured to allow any of the edges of a track element to be connected to any edge of another track element with the ends of the connected edges in alignment.
7. An assembly according to any one of the preceding claims, wherein the track elements are formed from a semi-rigid foam material.
8. An assembly according to any one of the preceding claims, wherein the shaped-recesses and each end of each connector are of complementary shape.

9. An assembly according to any one of the preceding claims, wherein one or more secondary elements are provided, each secondary element having an upper surface and a lower surface, the lower surface having formations for complementary engagement with track-defining formations, such that, in use, the secondary formations overlie some or all of a pathway on a track element.

10. A connection piece for use in conjunction with track elements of an assembly for guiding a toy vehicle, the track elements having shaped recesses for receiving the connection piece, and the connection piece comprising a main body with end sections shaped to complement the recesses in the track elements, and central section linking the end sections.

11. A connection piece according to claim 10, wherein the main body is formed from an elastically deformable material.

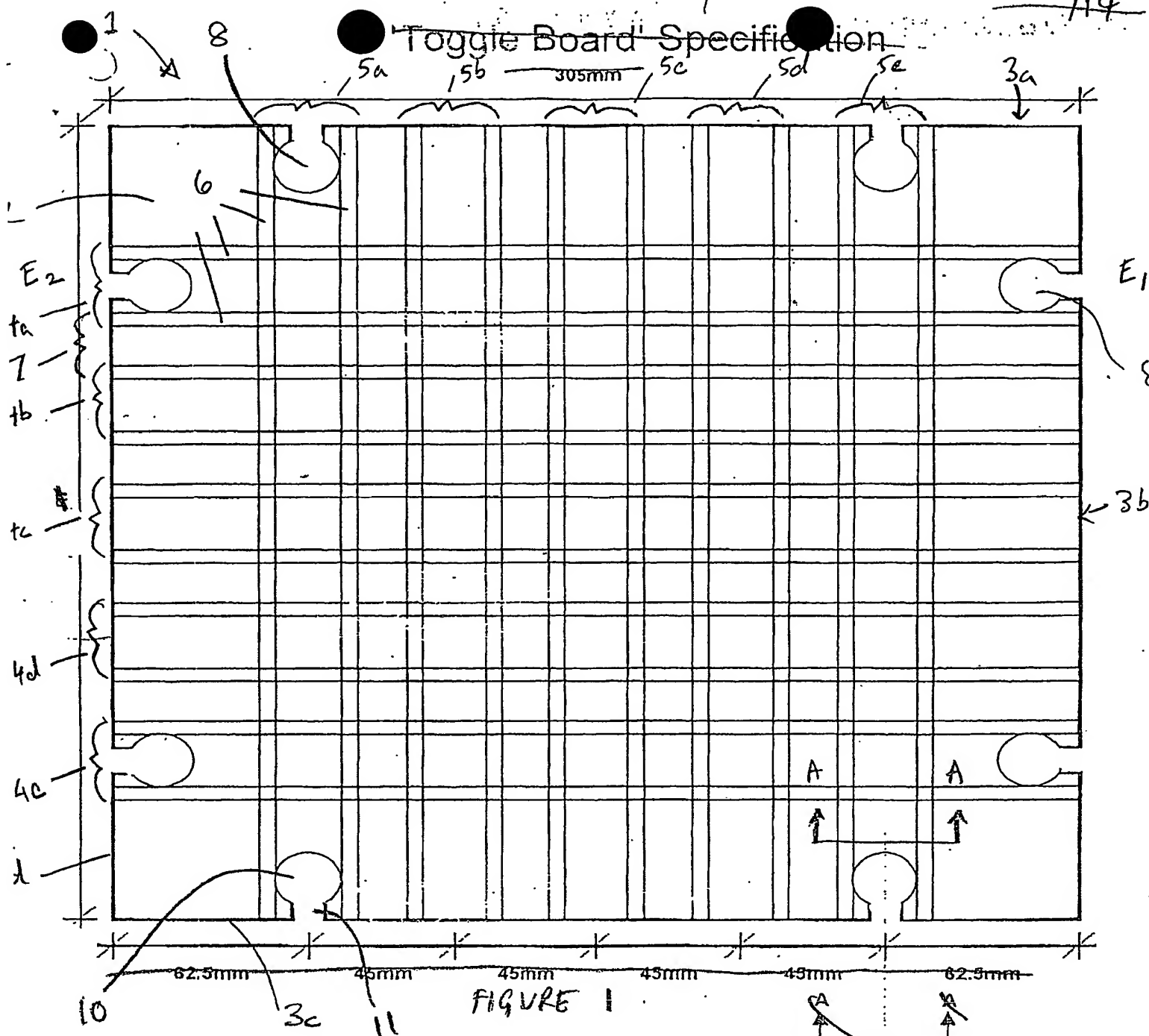
12. A connection piece according to claim 10 or 11, wherein the main body has a basal flange track element.

13. A connection piece according to claim 10, 11 or 12, wherein the end sections of the connection piece are flexibly connected.

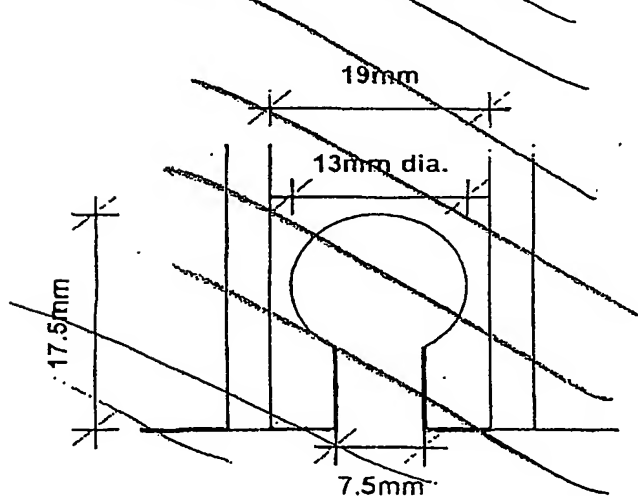
14. An assembly for guiding a toy vehicle substantially as herein described with reference to the accompanying drawings.

15. A connection piece for use in association with track elements of an assembly for guiding a toy vehicle, the connection piece being substantially as herein described with reference to Figure 5 to 9 of the accompanying drawings.

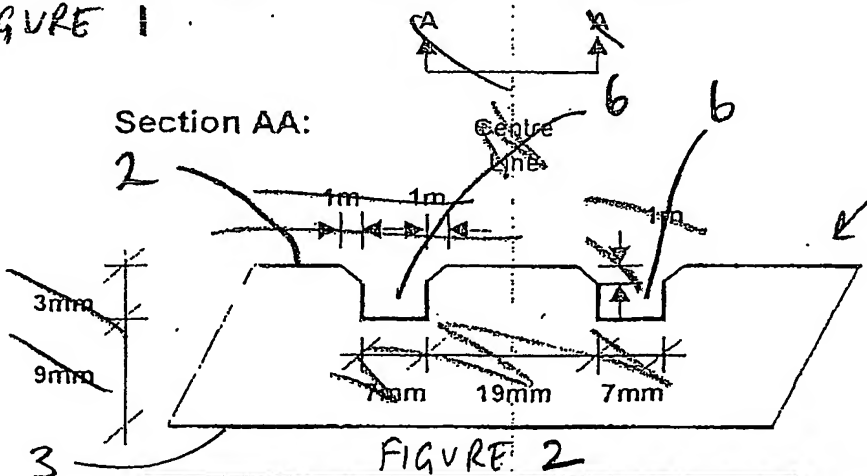
~~Toggle Board~~ Specification



~~Plan View: Toggle Slot~~



Section AA:



DO NOT SCALE

Copyright July 2002 Tristan Olivier

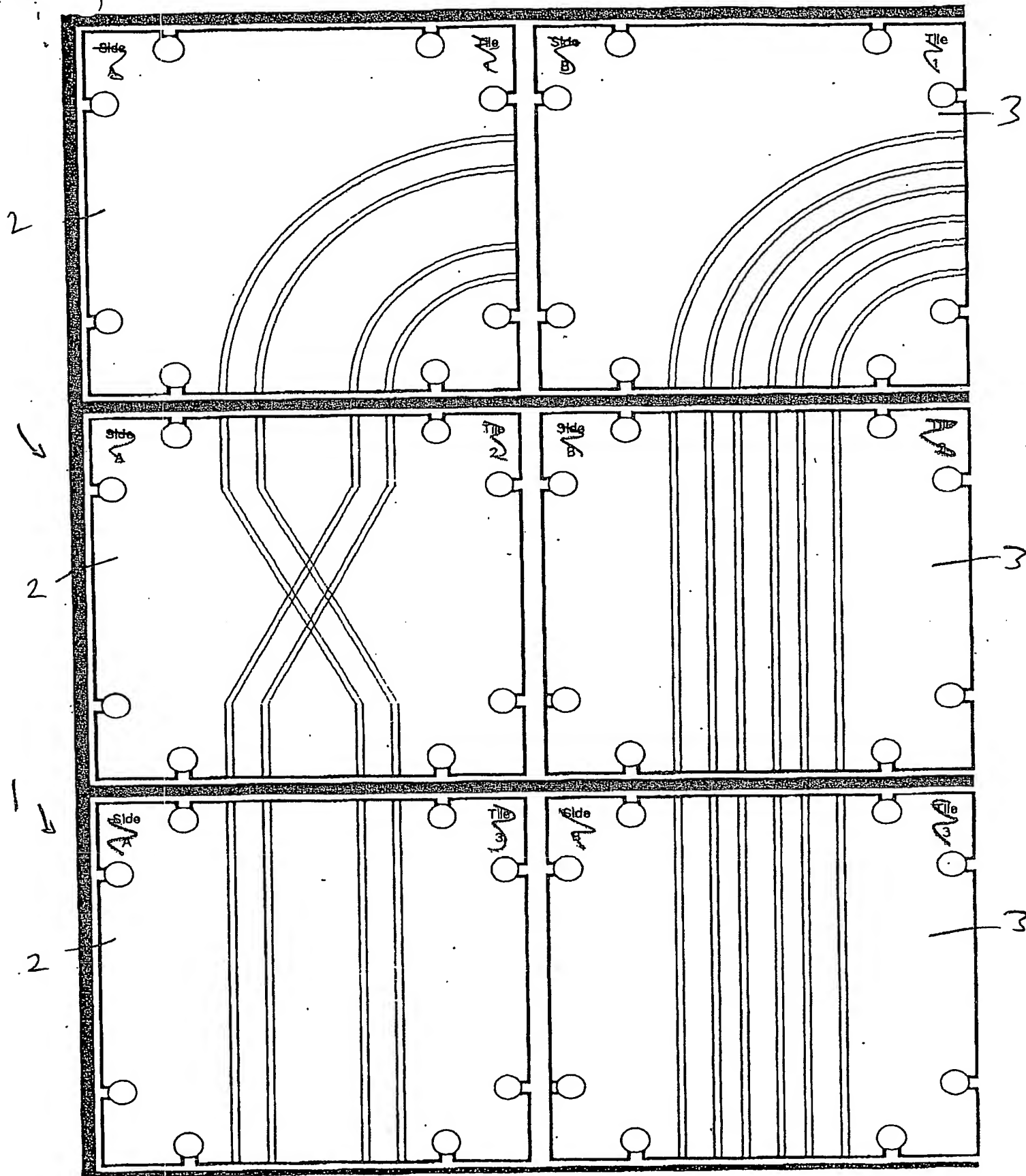


FIGURE 3

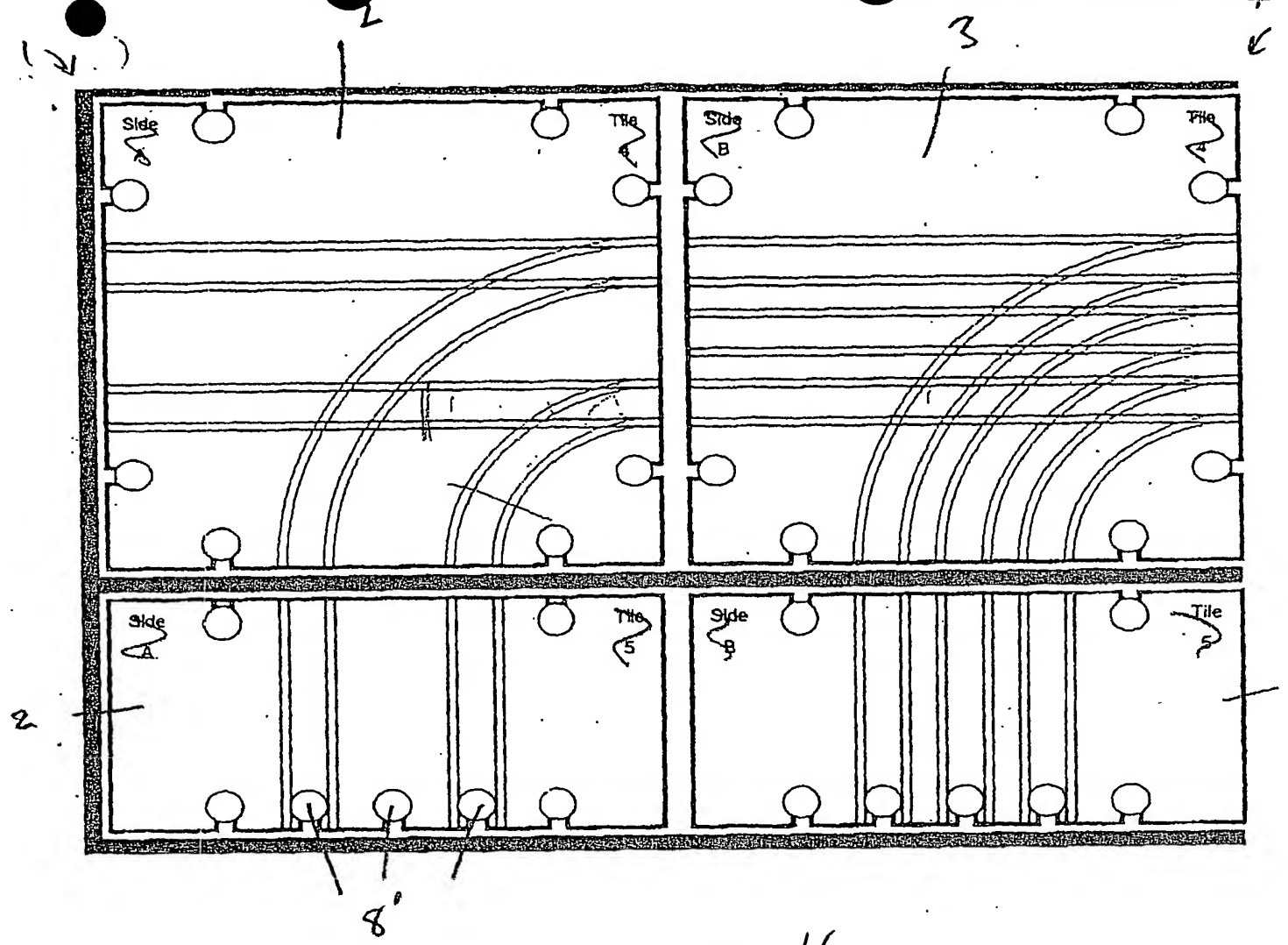
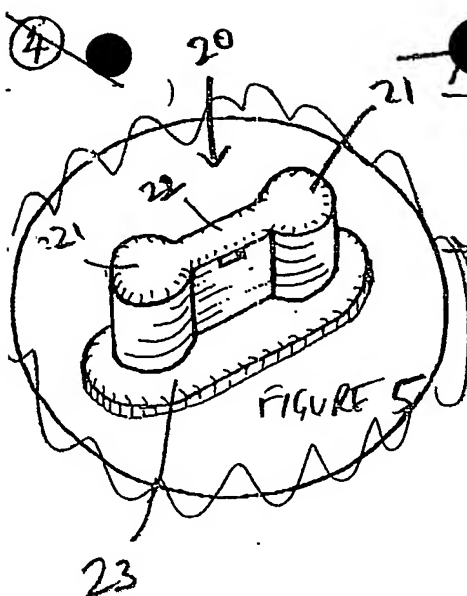


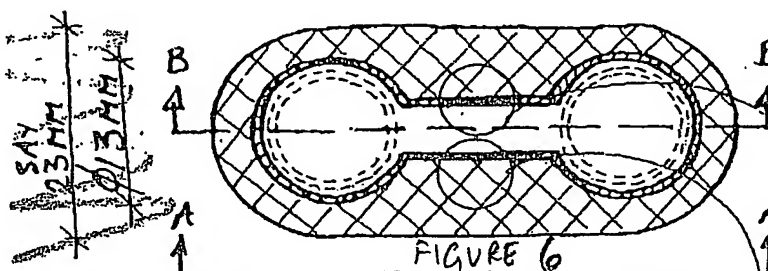
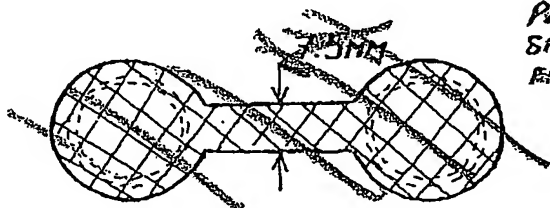
FIGURE 4



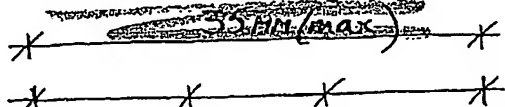
DESIGN - TYPE: - FLANGED

~~3 PIECE HOLLOW TOGGLE~~
~~BODY CONSTRUCTION~~

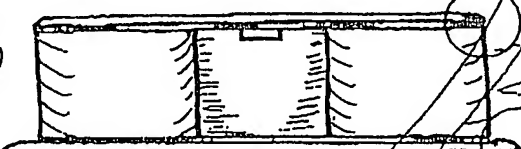
PLAN VIEW OF TOGGLE LID
SHOWING OUTLINE OF SNAP-
FIT LOCATORS ON UNDERSIDE



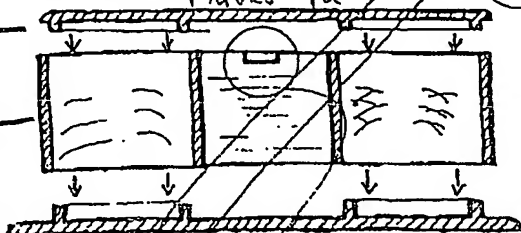
PLAN VIEW OF HOLLOW
B (HOLLOW) TOGGLE WITH
LID REMOVED SHOWS
OUTLINE OF BASE SNAP-
FIT LOCATORS & BASE.



ELEVATION A-A
SHOWS CURVED/SOFTENED
EDGES OF TOP & BASE

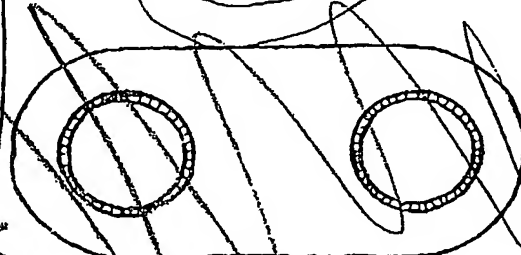


SECTION B-B
ELEVATED VIEW SHOWS
SNAP-FIT LOCATORS ON
TOP & BASE ALIGNED WITH
HOLLOW TOGGLE BODY



DETAIL SLOT ON TOP EDGE OF
SIDES OF TOGGLE BODY ALLOWS
ADULT TO PRISE OPEN SNAP-FIT
CONNECTION WITH SMALL SPUD
END TOOL

PLAN VIEW OF TOGGLE
BASE PLATE SHOWS POSITION
OF SNAP-FIT LOCATORS



DO NOT SCALE

© TRISTAN OLIVER 24/7/10

SNAP-FIT/LOCATOR PROFILE &
THICKNESS OF TOGGLE
TOP, TOGGLE WALLS, (C=J)
AND BASE TO BE ADVISED
BY MANUFACTURER.

MANUFACTURED ON AIRFIX
TYPE GRID/FRAPE FOR
PURCHASER SELF-ASSEMBLY. OR
MADE AS ONE PIECE?

4/13

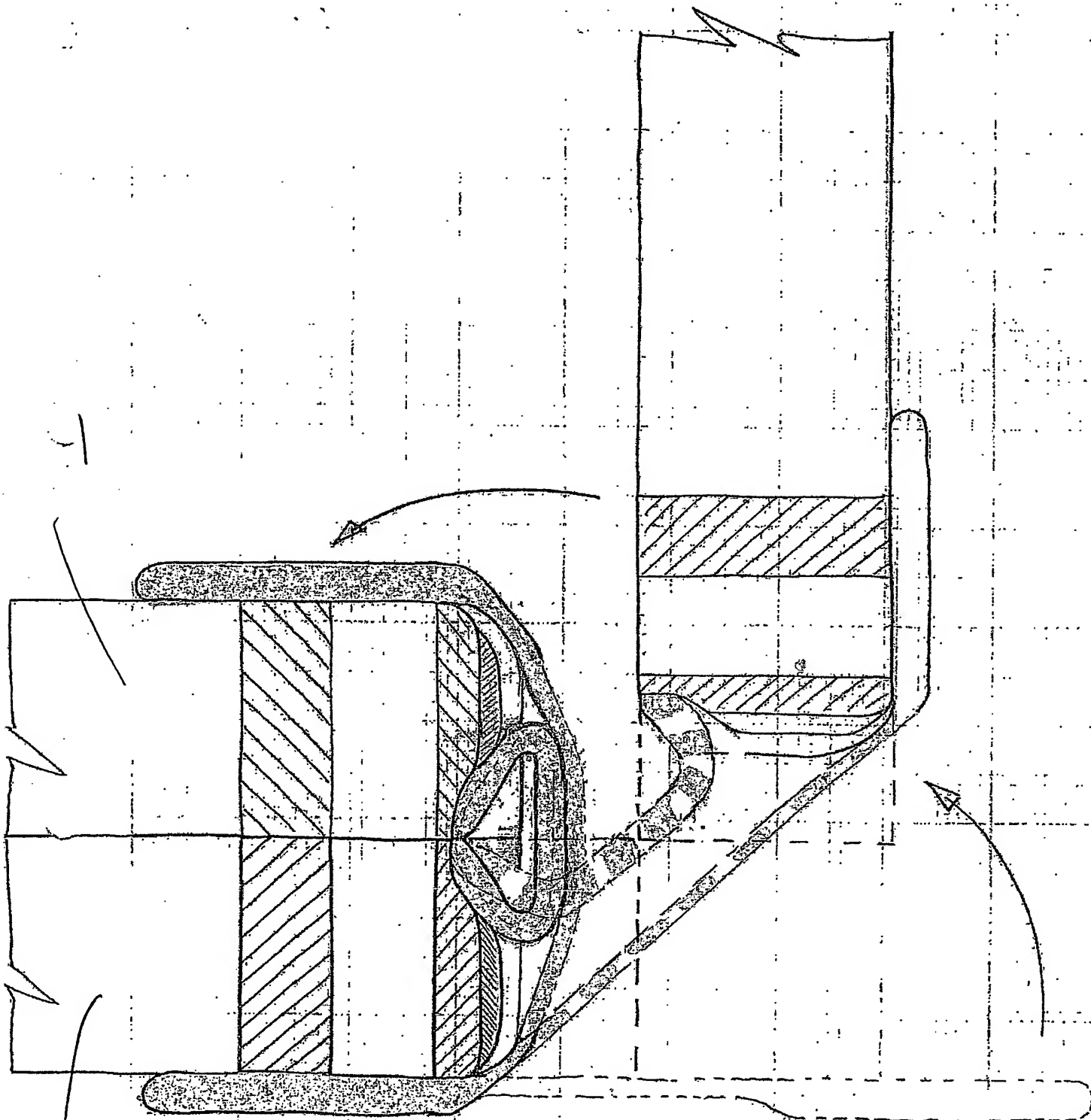


FIGURE 9

35

002014003508 F-00

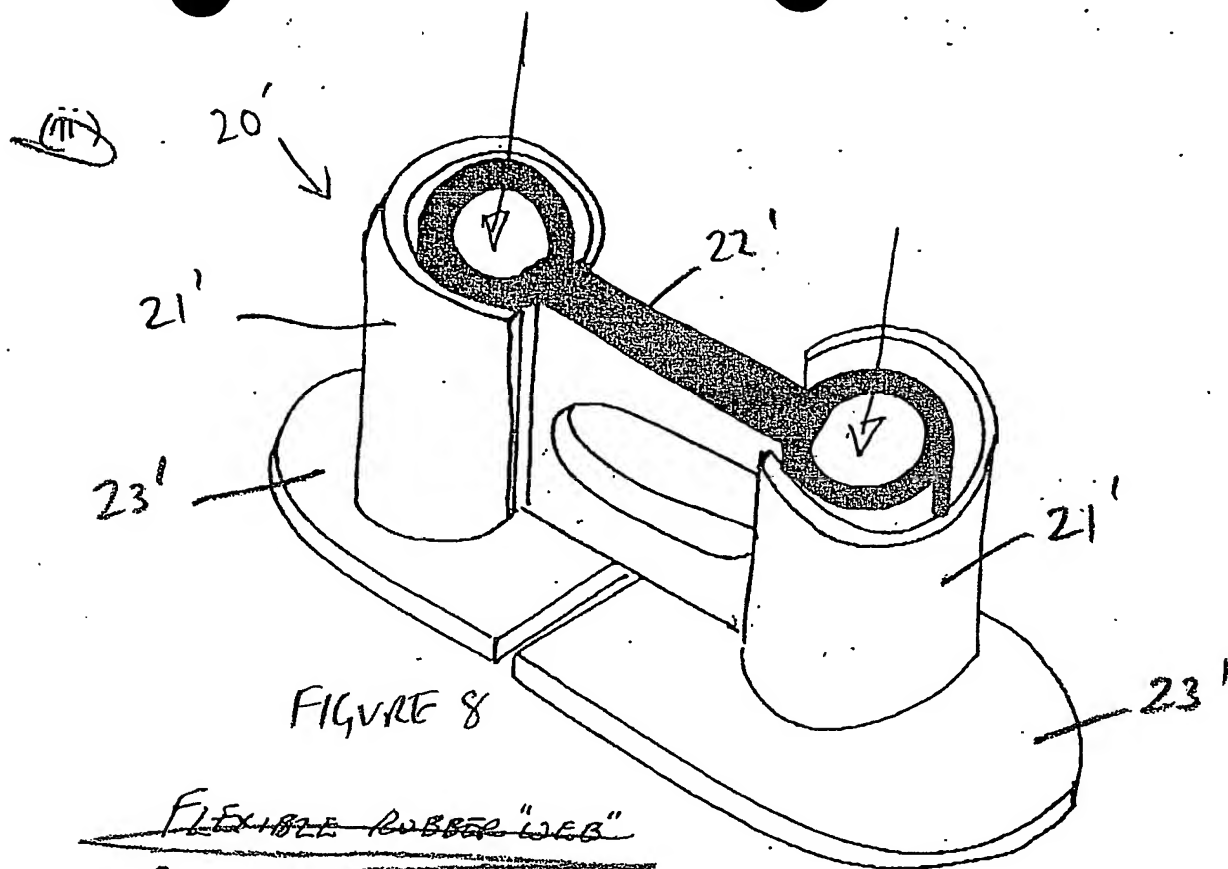
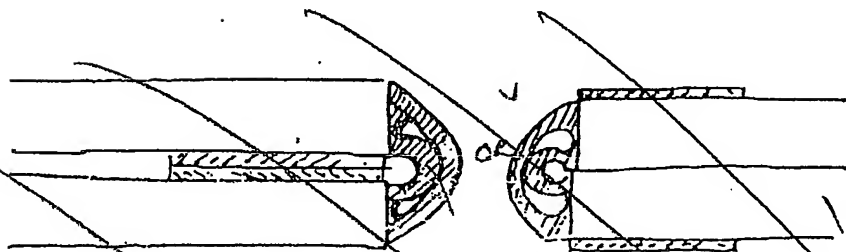


FIGURE 8

FLEXIBLE RUBBER "WEB"
SLIDES INTO SLOTTED TUBES
HOLLOW/TUBULAR WEB ENDS
ALLOW "HOLLOW" TOGGLE CONFIGURATION
TO PROVIDE LOCATORS FOR SIGNS/SIGNALS/BUILDINGS/
BRIDGE SUPPORTS etc.



180°
non-mechanical
articulated toggle

14/11/02 b

Toggle as bridge support:

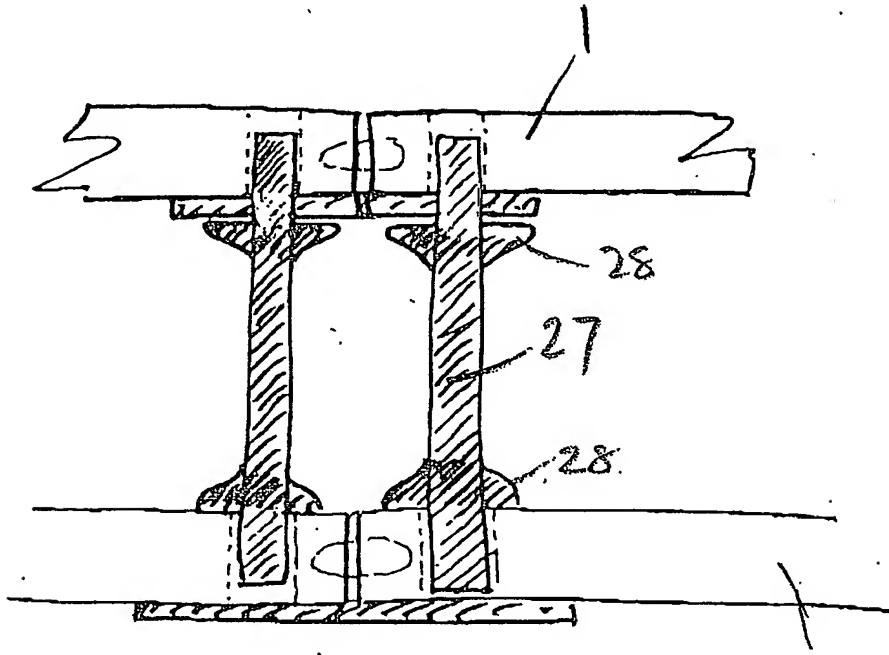
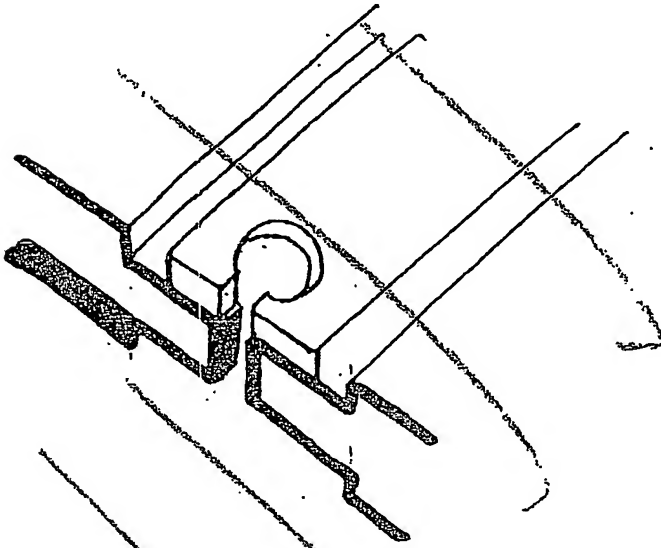
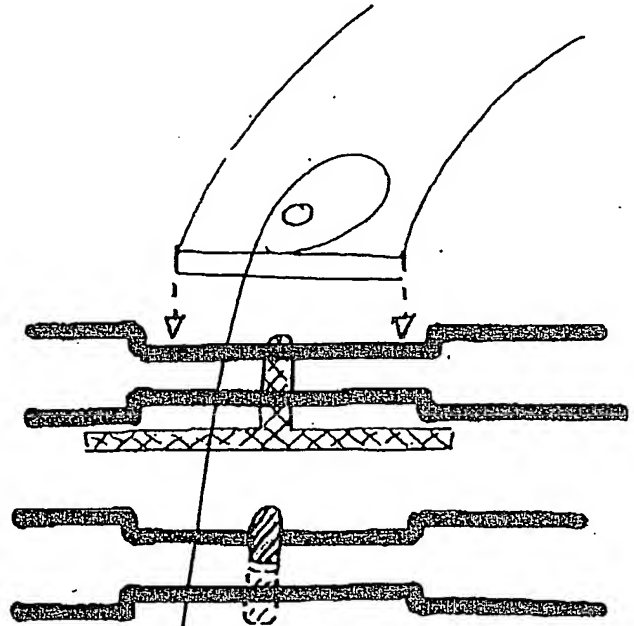


FIGURE 10

INSERT FIXING / LOCATION METHODS :



DOUBLE FEMALE OR
MALE-FEMALE CONNECTORS



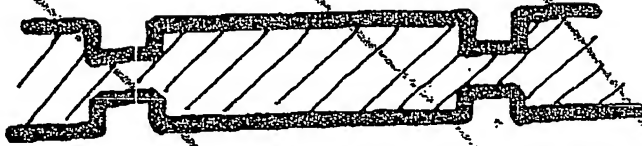
SINGLE / DOUBLE PIN

HOLE PUNCHES THRO AS EACH
INSERT IS REVERSIBLE

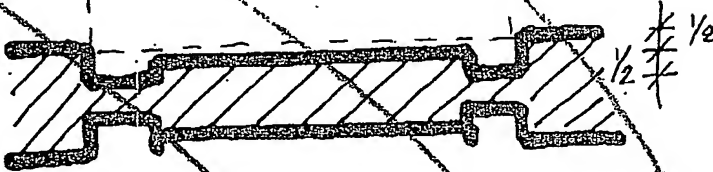
Figure 11d

TRACK/GROOVE PROFILES

①



②



③



SINGLE GROOVE CAN BE USED
FOR TOY CARS

INSERT PROFILES

④

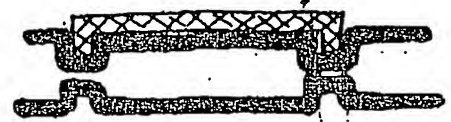


FIGURE 11a

⑤



30c

⑥



⑦

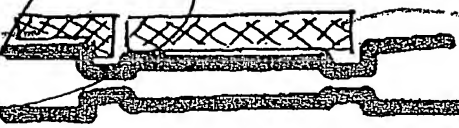
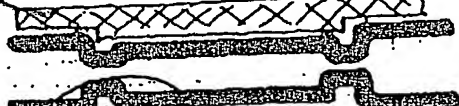


FIG 11

30

30f

9

FIG 11 C
INSERTS ^⑧ NARROWER THAN GROOVE
CAN BE COLOUR-CODED TO REPRESENT
ROAD/RAIL/WATERWAYS ETC. THEY ALSO
CREATE RAILS (SEE ①)

① INTERLOCKING

* INSERTS CAN BE 2 FACED 'TILES' OR
4-FACED 'BRICKS'

EDGE PIECES PRE-MARKED OR CAN BE
WRITTEN ON

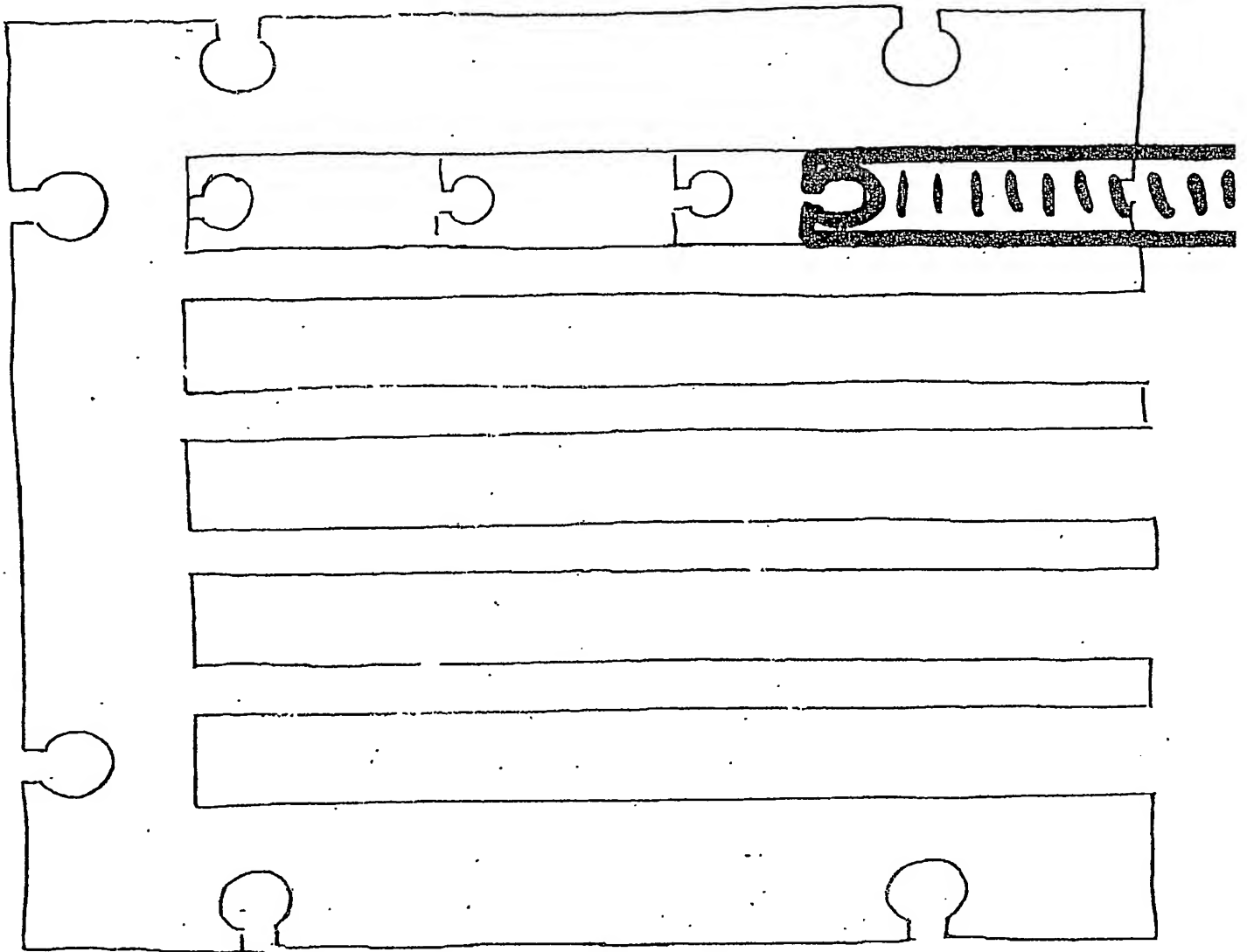
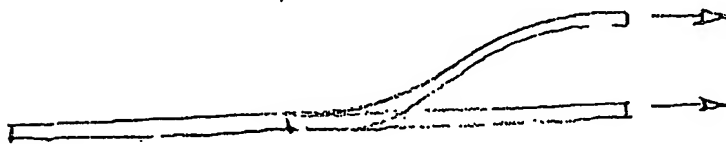


FIGURE 12a

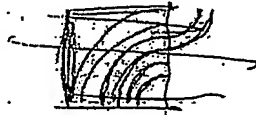
Toggleboard with cut-outs to allow sections of normal wooden track to be used in order to incorporate 3rd party bridges etc



Elevation

FIGURE 12b

mini-trac



~~smaller / more compact / deeper~~ ?

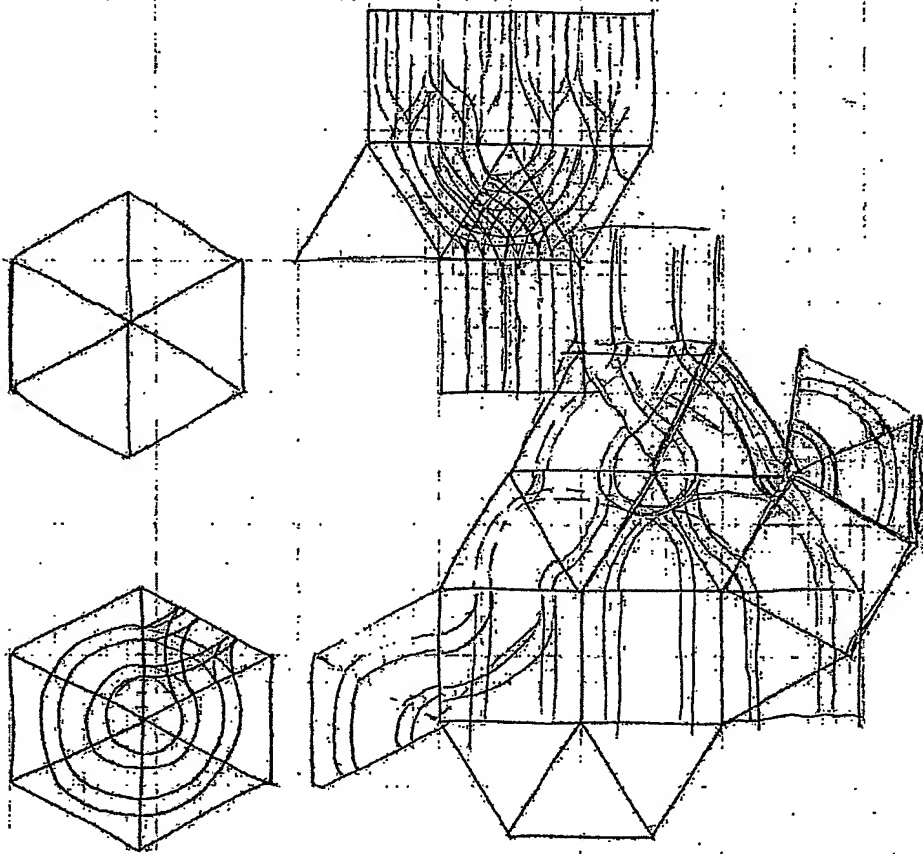


FIGURE 13

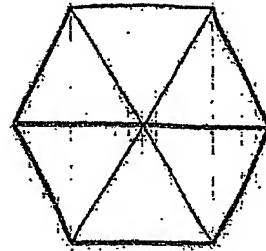
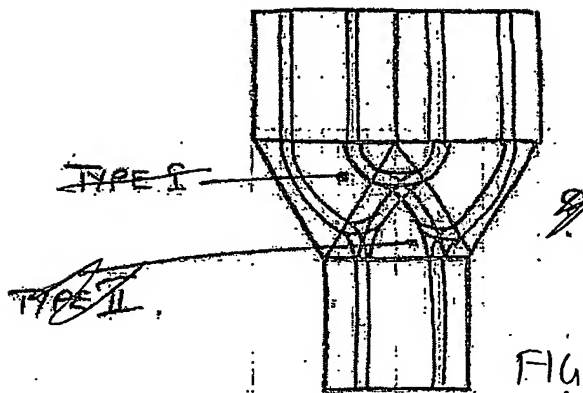
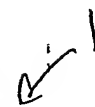
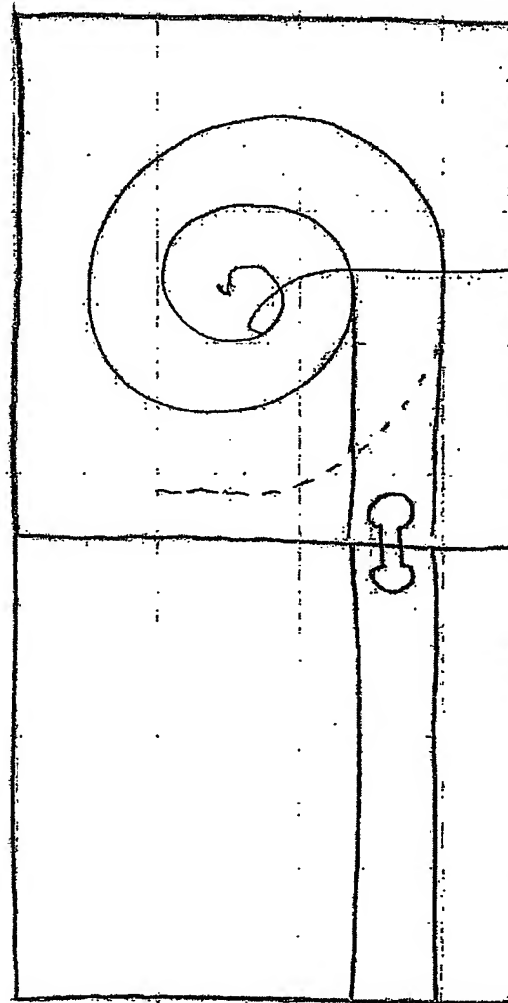


FIGURE 14



50
~~raised 3D spiral~~
~~provides downhill~~
~~ramp for vehicle~~

~~PERFECT DESK TOY!~~
~~PAGES FLAT.~~
~~ELASTIC BAND/OTHERWISE~~
~~SELF-POWERED VEHICLE~~
~~COULD ALSO GO UP HILL~~
~~AND ACROSS BRIDGES~~
~~CONNECTING TWO SPIRALS~~

FIGURE 15

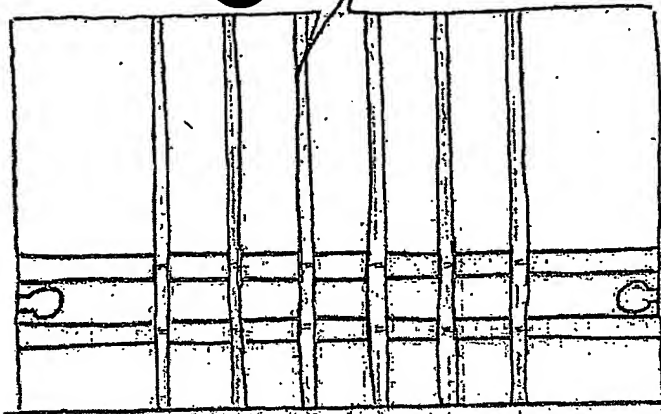


FIG 16 a

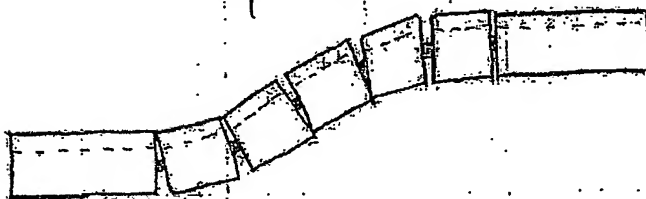
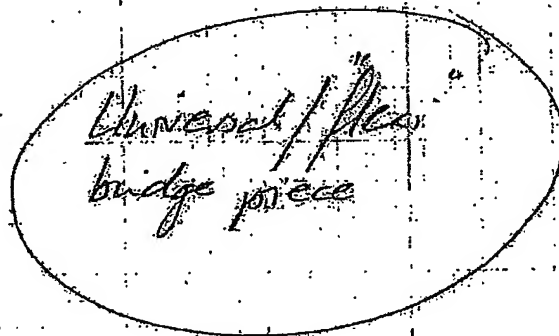


FIG 16 b



B/4

4/12

(12) instant
document

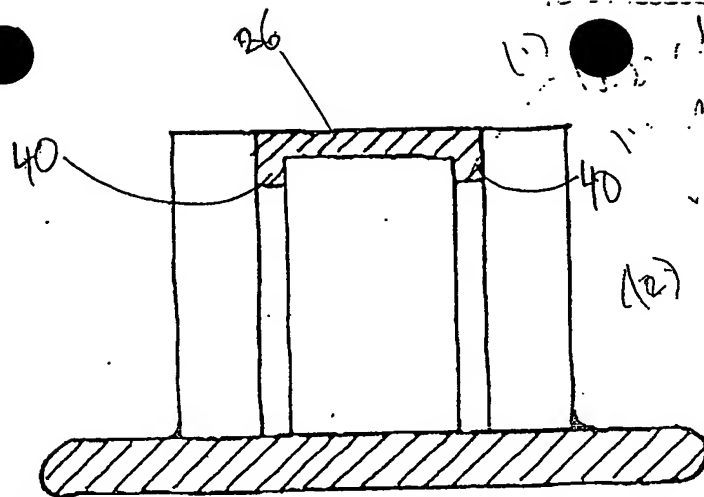


FIGURE 17a

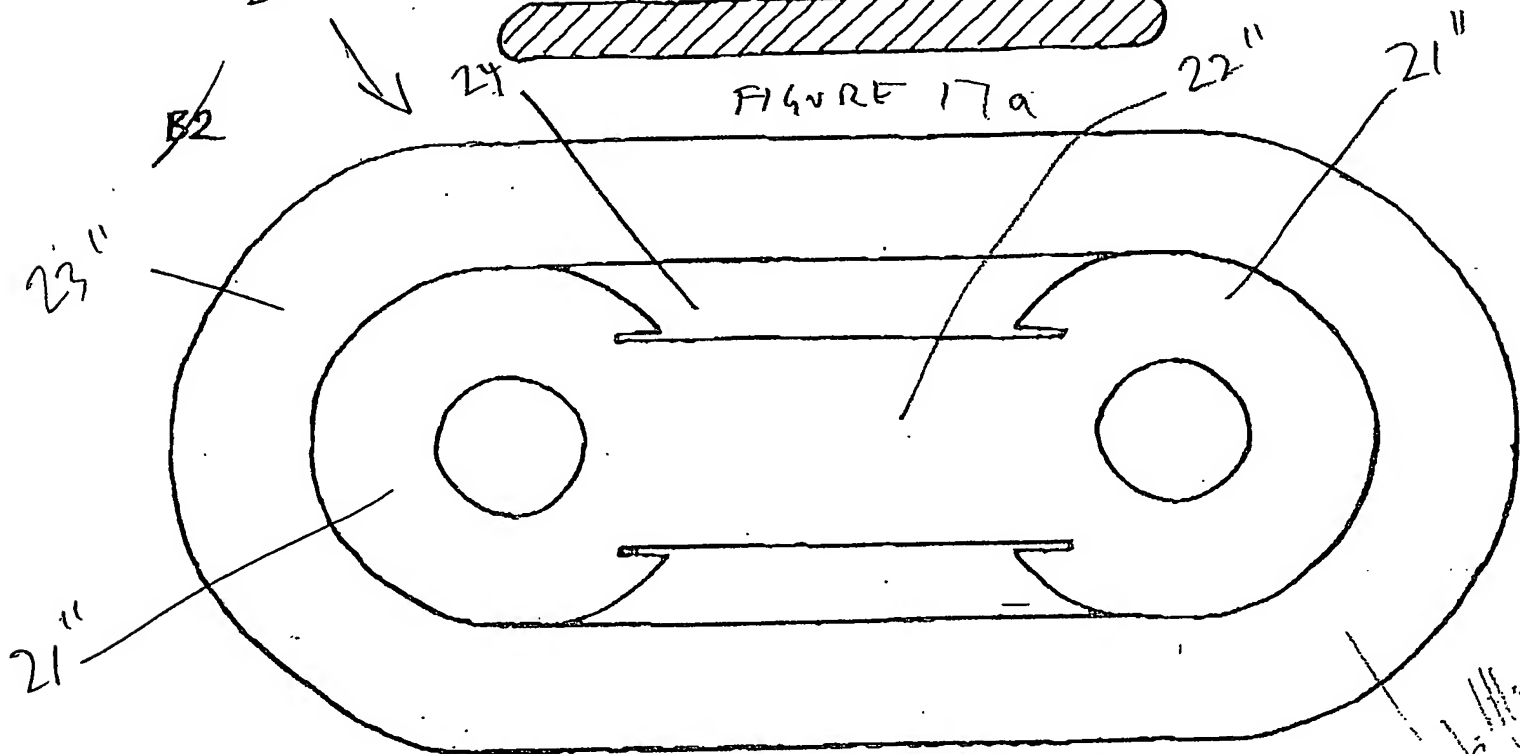


FIGURE 17b

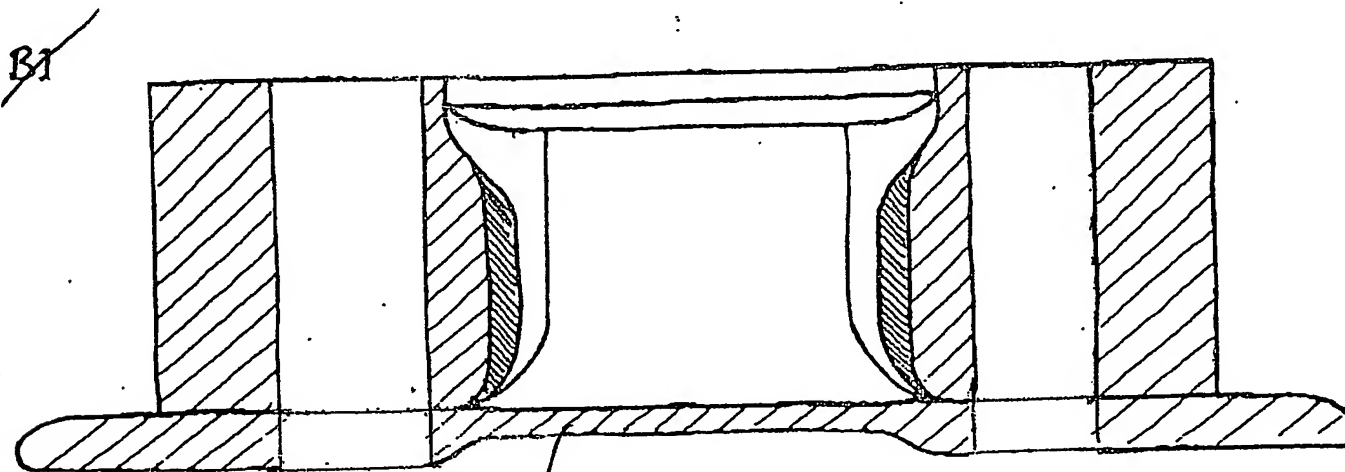


FIG 17c

25

83

5/12

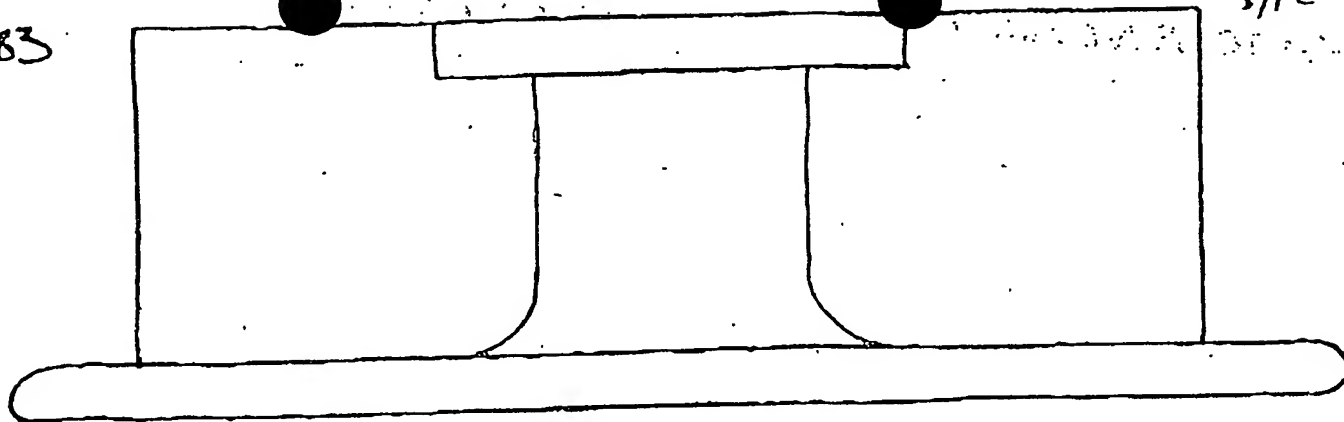


Figure 17b

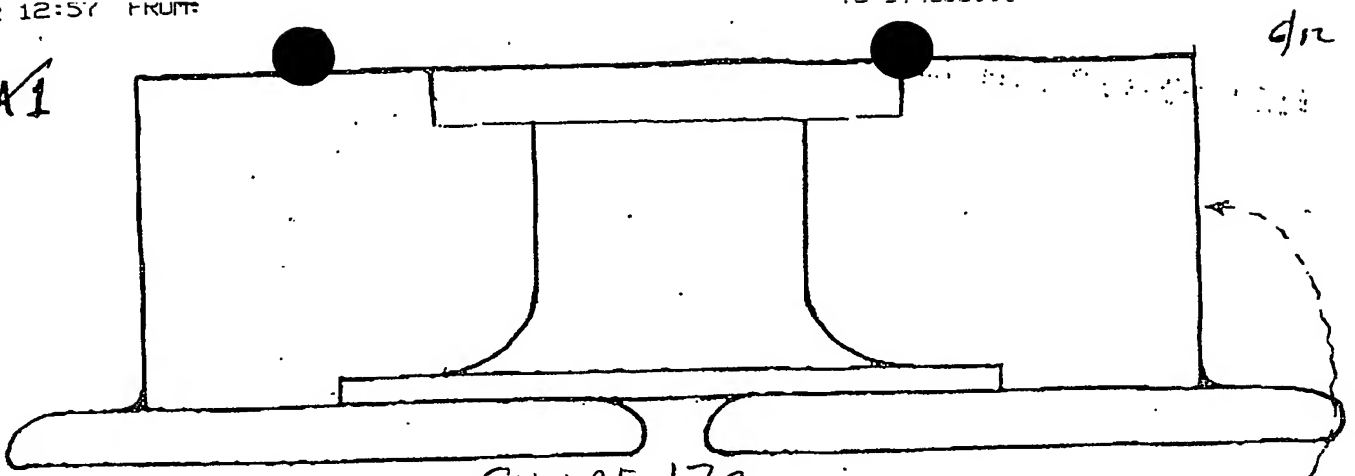


FIGURE 17e

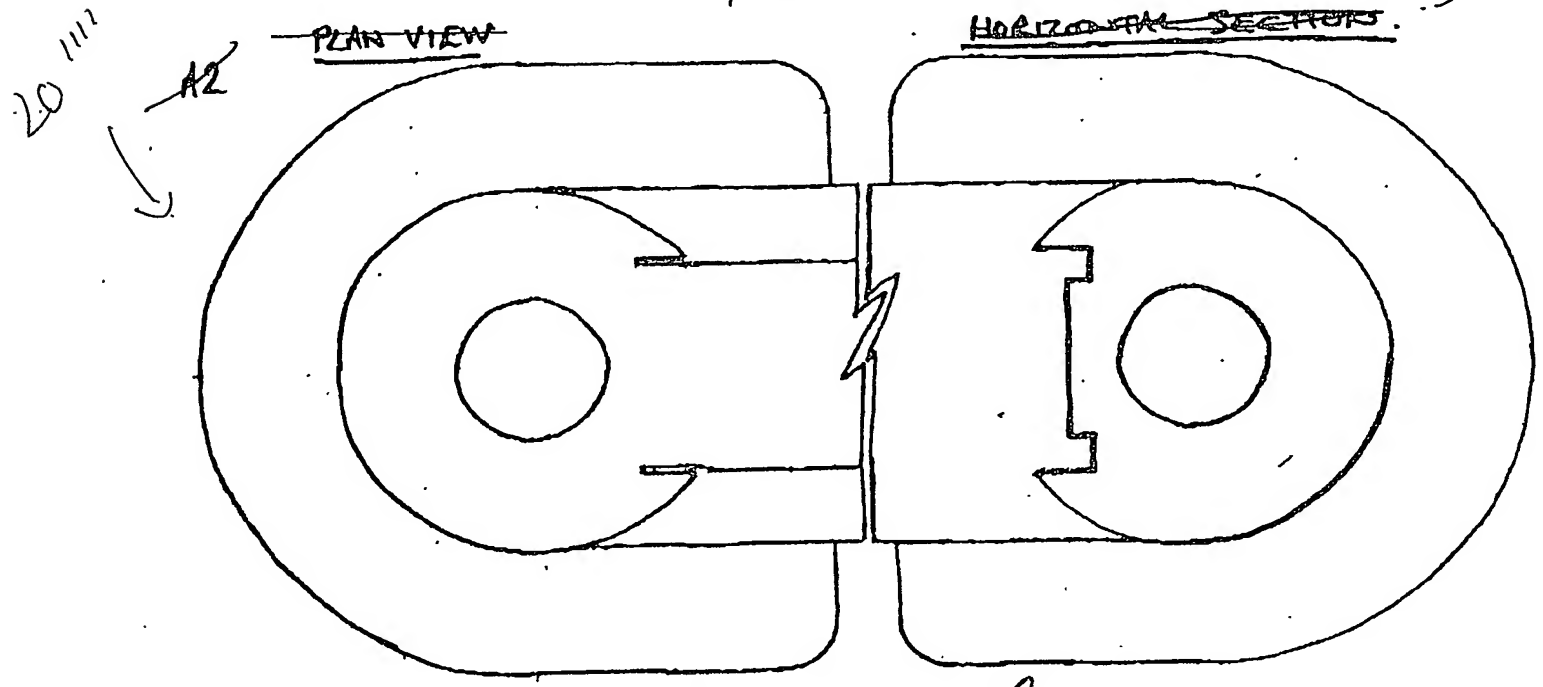


FIGURE 17f

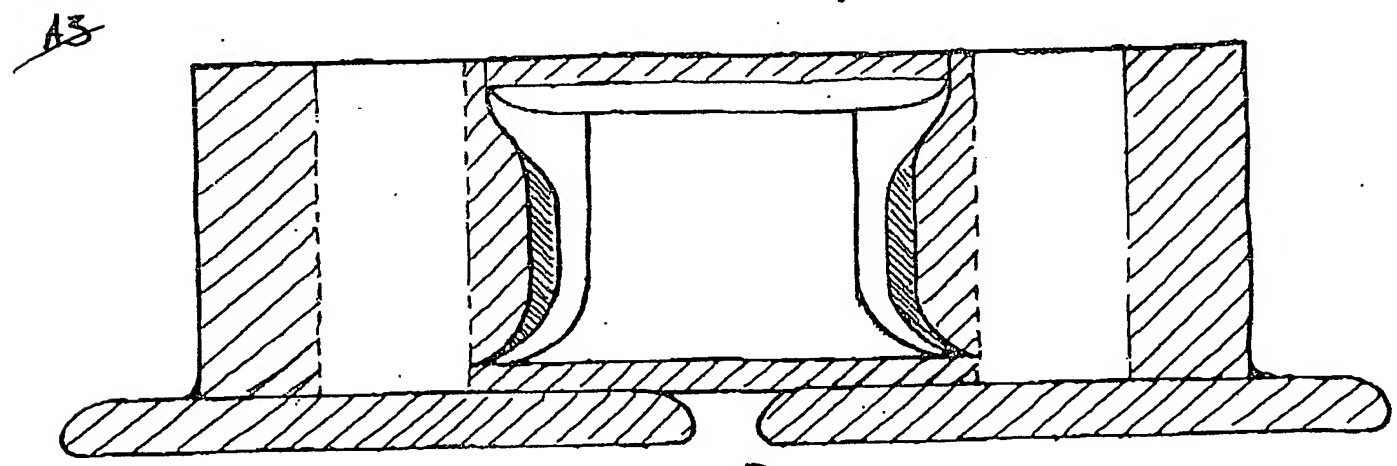


FIGURE 17g

✓ 14

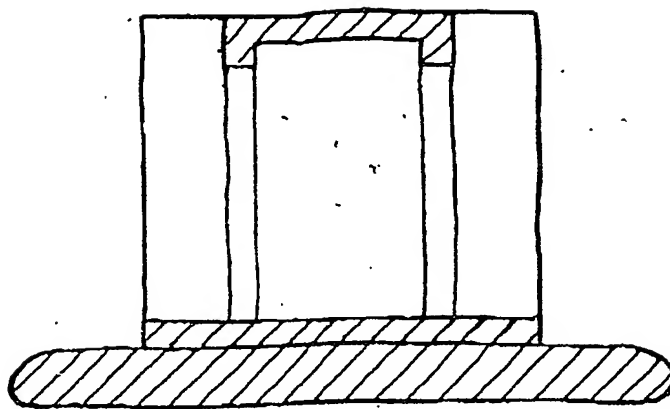


FIGURE 17h

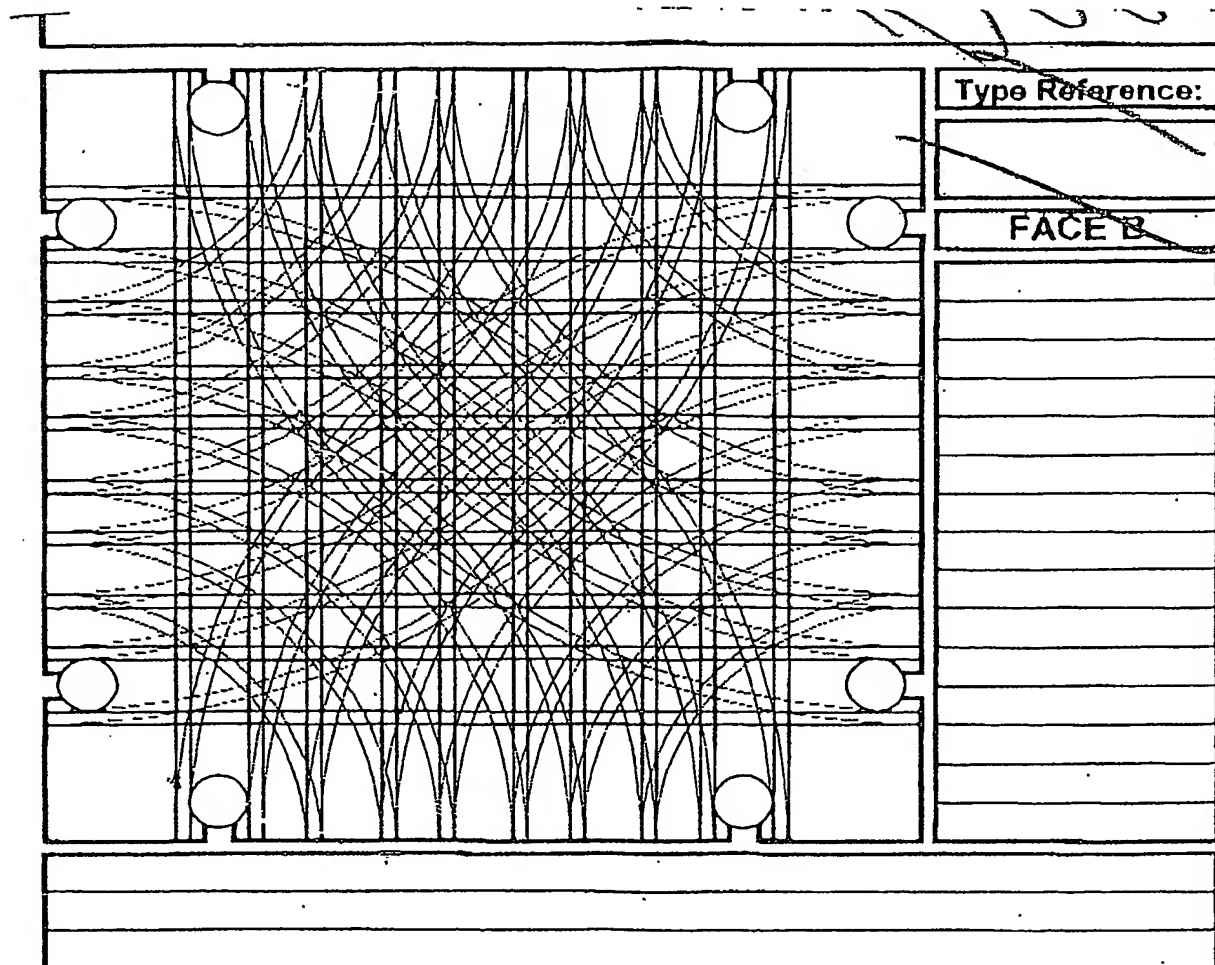
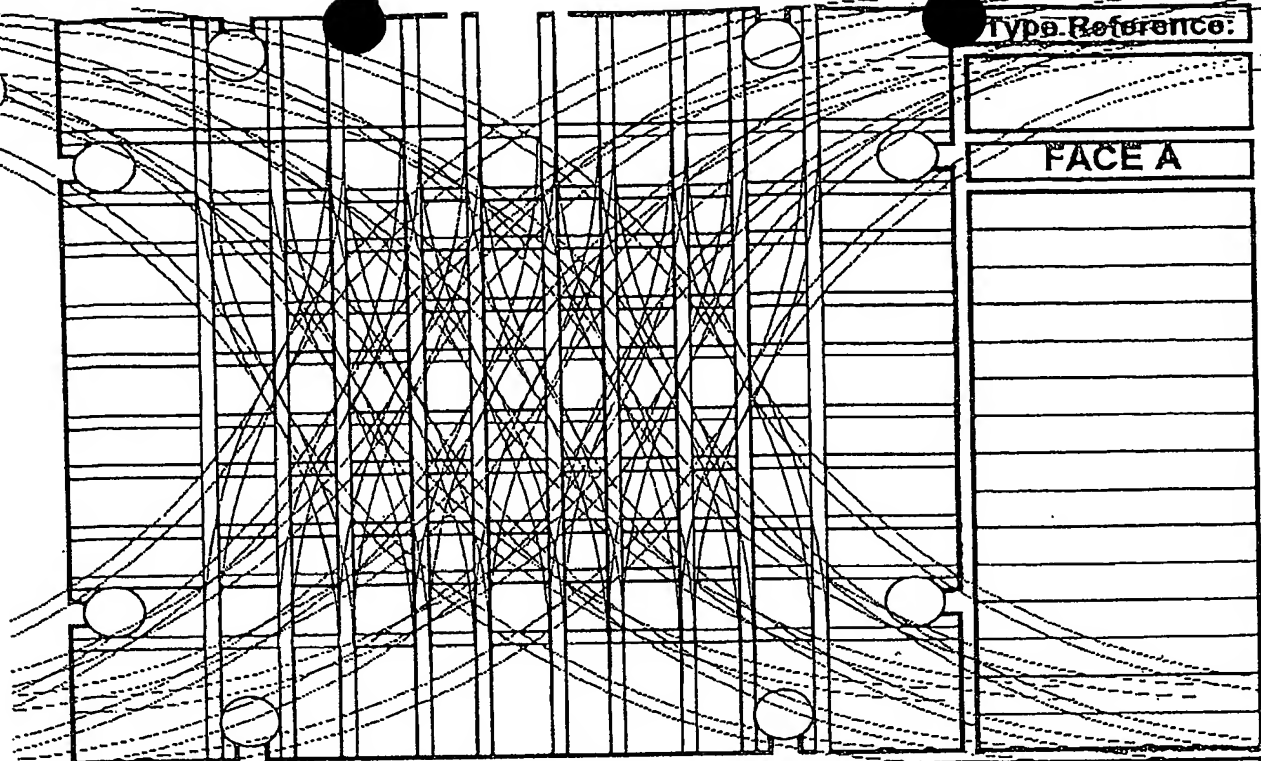
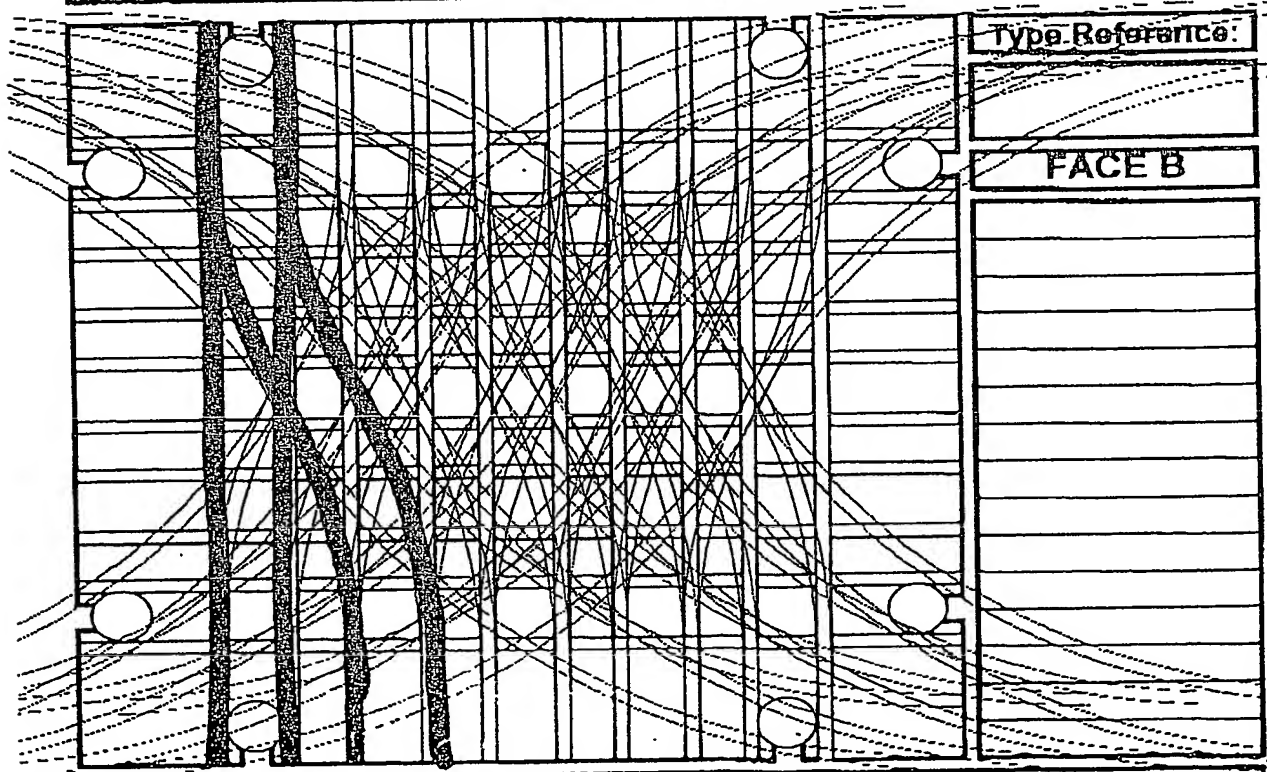


FIGURE 18a

9/12

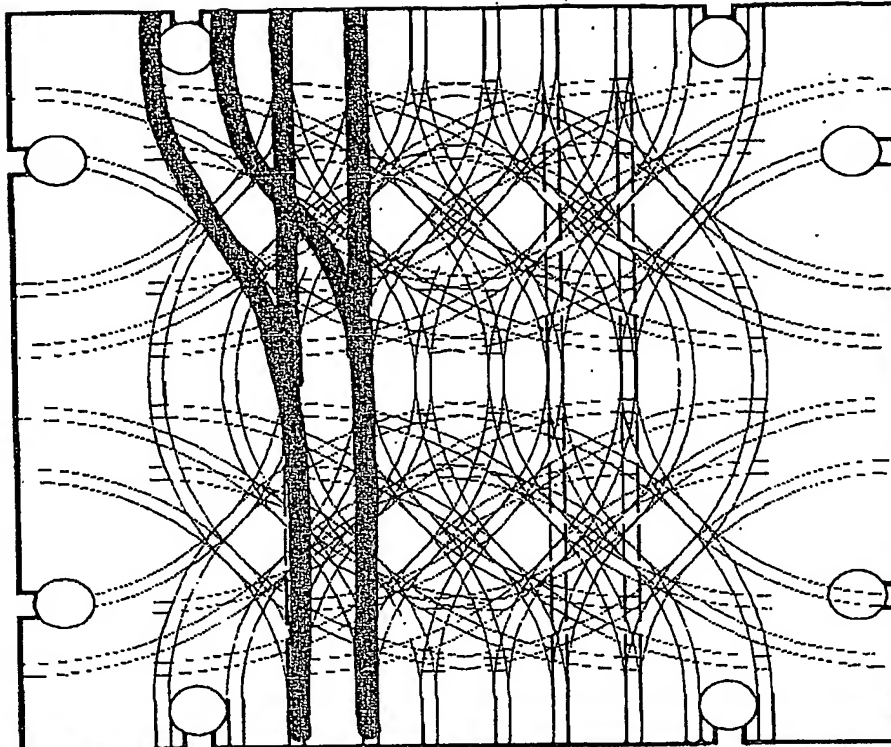


| |
|--|
| |
| |
| |
| |

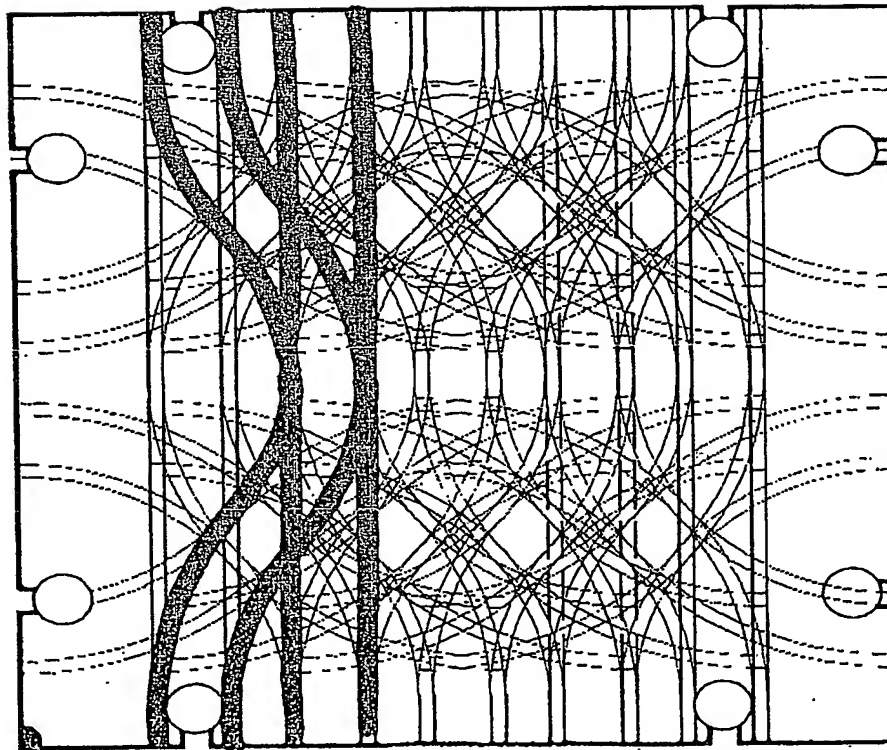


'LONG' SWITCH

FIGURE 186

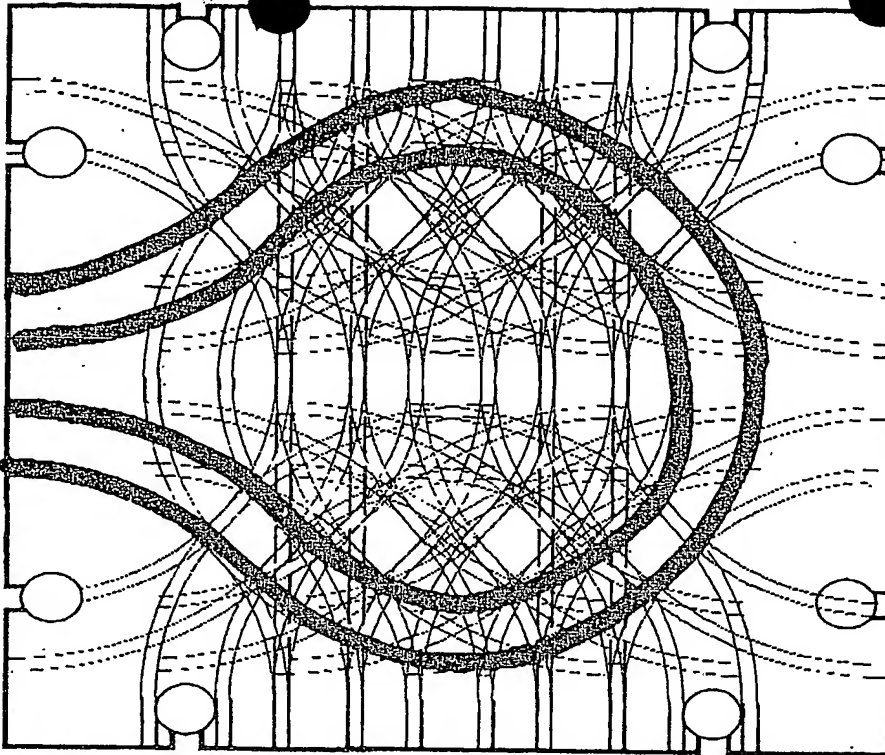
$$10/12$$


SHORT SWING



RETURN SLIP

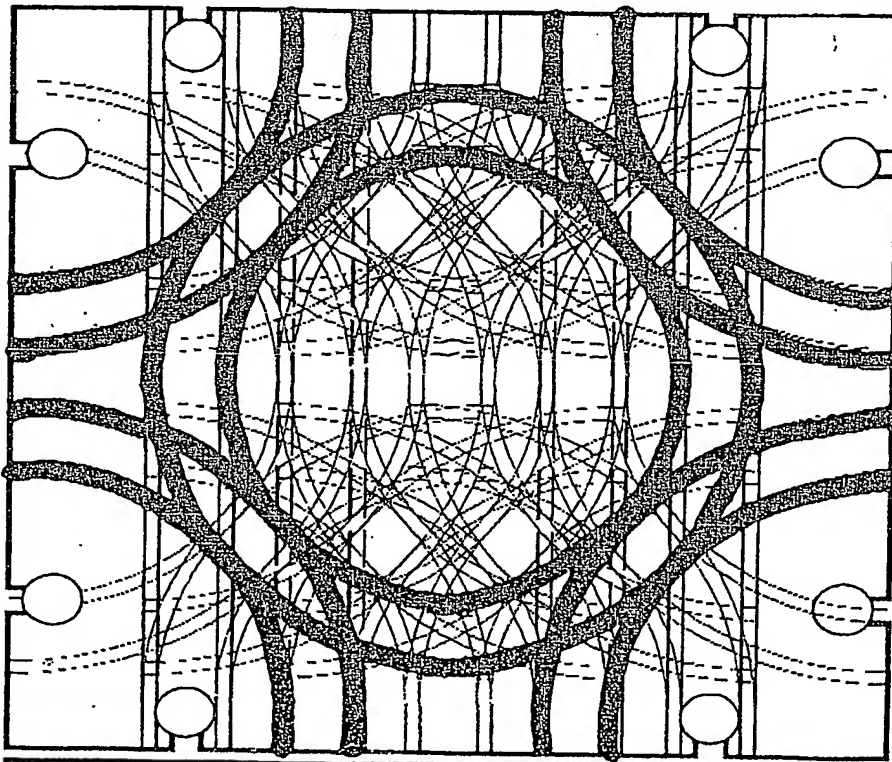
FIGURE 15d



Type Reference:

FIGURE
18 e

~~UNIVERSAL LENS~~



Type Reference:

~~FACE~~

FIG
18 f

~~UNIVERSAL LENS~~

12/12

Type Reference:

FACE A

FIGURE
189

5. STRONGER NEVER!

A complex geometric diagram, likely a technical drawing or a mathematical proof. It features a grid of vertical lines intersected by a series of horizontal dashed lines. The intersections form a dense pattern of small, overlapping diamond shapes. The diagram is framed by a thick black border with circular elements at the corners.

FACE B

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☒ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.